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**IS : 7614 - 1975**  
**( Reaffirmed 1991 )**

*Indian Standard*  
**SPECIFICATION FOR  
WOODEN BOBBINS FOR RING DOUBLING  
AND TWISTING FRAMES**

**( First Reprint FEBRUARY 1997 )**

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**BUREAU OF INDIAN STANDARDS**  
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**AMENDMENT NO. 1      OCTOBER 1978**  
**TO**  
**IS : 7614-1975   SPECIFICATION FOR**  
**WOODEN BOBBINS FOR RING DOUBLING AND**  
**TWISTING FRAMES**

**Alterations**

( *Page 10, clause 3.6* ) — Substitute the following for the existing clause:

**'3.6 Weight** — Collective weight of 400 bobbins shall be as agreed to between the buyer and the seller, subject to a tolerance of  $\pm 4$  percent.

**NOTE** — In case of dispute, the bobbins shall be conditioned in standard atmosphere at  $65 \pm 2$  percent relative humidity and  $27 \pm 2^{\circ}\text{C}$  temperature before checking of weight.'

( *Page 11, clause 6.4, line 2* ) — Substitute 'and eccentricity' for 'eccentricity and weight of individual bobbin'.

( *Page 11, clause 6.5* ) — Substitute the following for the existing clause:

**'6.5** The number of bobbins to be tested for tackiness, resistance to moisture, resistance to steam and number of sets for weight shall be according to col 5 of Table 4.'

[ *Page 11, clause 6.6(c), line 1* ] — Substitute 'bobbins or sets' for 'bobbins'.

# *Indian Standard*

## SPECIFICATION FOR WOODEN BOBBINS FOR RING DOUBLING AND TWISTING FRAMES

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*( Continued from page 1 )*

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# *Indian Standard*

## SPECIFICATION FOR WOODEN BOBBINS FOR RING DOUBLING AND TWISTING FRAMES

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 13 March 1975, after the draft finalized by the Textile Mill Accessories ( Other Than Jute ) Sectional Committee had been approved by the Textile Division Council.

**0.2** This standard is based on the manufacturing practices followed in the country in this field.

**0.2.1** In the preparation of this standard due consideration has been given to provide the user with maximum yarn capacity consistent with bobbin strength. The prescribed requirements ensure maximum efficiency in operation.

**0.3** This standard contains clauses 2.2, 2.3, 3.1.1, 3.6 and 6.1 which call for agreement between the buyer and the seller which permit the buyer to use his option for selection to his requirements.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

**1.1** This standard prescribes requirements of wooden bobbins for ring doubling and twisting frames of the following types:

- a) Double flanged bobbins,
- b) Taper-build ( tapered-head ) bobbins, and
- c) Taper-build ( radiused-head ) bobbins.

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\*Rules for rounding off numerical values ( revised ).



## 2. MANUFACTURE

**2.1 Material** — The bobbins shall be made of seasoned timber ( see IS : 1141-1973\* ) of any of the species listed below:

TRADE NAME	BOTANICAL NAME
Birch	<i>Betula</i> sp.
Haldu	<i>Adina cordifolia</i> Hook. f.
Kaim ( kalam )	<i>Mitragyna Parvifolia</i> korth.
Maple	<i>Acer</i> sp.
Mullilam	<i>Zanthoxylum rhetsa</i> DC.
	<i>Zanthoxylum budrunga</i> DC.
White cedar	<i>Dysoxylum malabaricum</i> Bedd.

**2.2 Shields** — Metal shields, if prescribed by the buyer, shall be rigidly fixed. The shield shall be made of either tin-plate having a minimum thickness of 0.315 mm or any other metal sheet of thickness as agreed to between the buyer and the seller subject to a tolerance of  $\pm 0.03$  mm.

**2.3 Finish** — The bobbins should be enamelled or varnished as agreed to between the buyer and the seller.

**2.4 Freedom from Defects** — The bobbins should be visually free from bark pockets, checks or cracks gum ducts, honeycombing, knots, splits and any other defect which is likely to affect the life or usefulness of the bobbins.

## 3. REQUIREMENTS

**3.1 Dimensions** — The dimensions of the bobbins shall be in accordance with the requirements of the Tables 1, 2 and 3 read with Fig. 1, 2 and 3 respectively.

**3.1.1** Bobbins to be used with ring diameter above 100 mm shall have the dimensions as agreed to between the buyer and the seller subject to the tolerances given in Tables 1 to 3.

**3.2 Eccentricity** — The bobbins shall be concentric. The eccentricity shall not exceed 0.5 mm. The method for determining the eccentricity is given in A-1.

**3.3 Tackiness** — The bobbins shall not be tacky. The method for determining tackiness is given in A-2.

**3.4 Resistance to Moisture** — The bobbins shall be moisture resistant. The enamelled bobbins shall not absorb more than 3.5 percent moisture and the varnished bobbins not more than 7 percent when tested by the method prescribed in A-3.

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\*Code of practice for seasoning of timber (first revision).

TABLE 1 DIMENSIONS OF DOUBLE FLANGED ROBBINS

( Clause 3.1, and Fig. 1 )

All dimensions in millimetres.

LIFT	RING DIAMETER	DIAMETER OF TOP AND BOTTOM FLANGE	DIAMETER OF BARREL	LENGTH			OVERALL LENGTH	NOMINAL LENGTH	
				Base	Barrel	Top		Bottom Bearing	Top Bearing
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		<i>A &amp; C</i>	<i>B</i>	<i>D</i>	<i>E</i>	<i>F</i>	<i>H</i>	<i>L</i>	<i>M</i>
150 to 225	50	40	21	16	↑	13	Lift + 29	25	25
	55	45	22	16	↑	13	Lift + 29	25	25
	60	50	22	16	↑	13	Lift + 29	25	25
175 to 225	65	55	24	16	↓	13	Lift + 29	25	25
	75	65	27	16	↓	13	Lift + 29	44	44
	80	70	29	16	↓	16	Lift + 32	44	44
	90	75	30	16	↓	16	Lift + 32	44	44
200 to 250	100	85	33	16	↓	16	Lift + 32	50	50
TOLERANCE	—	± 1	± 0.5	± 1	± 1	± 1	± 2	—	—



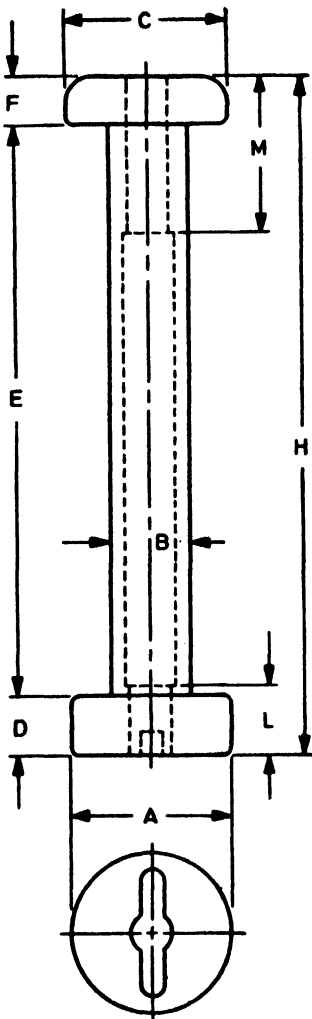


FIG. 1 A TYPICAL DOUBLE FLANGED BOBBIN

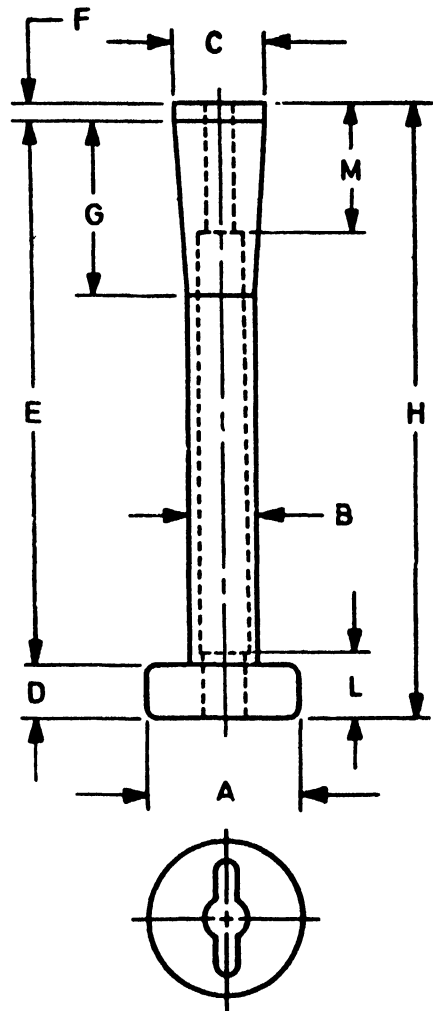


FIG. 2 A TYPICAL TAPER-BUILD (TAPERED-HEAD) BOBBIN

TABLE 3 DIMENSIONS OF TAPER-BUILD (RADIUS-HEAD) ROBBINS

(Class 3.1, and Fig. 3)

All dimensions in millimetres.

LIFT	RING DIAMETER	DIAMETER			LENGTH			RADIUS UNDER HEAD	OVERALL LENGTH	NOMINAL LENGTH		
		Base	Barrel	Top	Base	Barrel	Top			Bottom Bearing	L	Top Bearing
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(12)
150 to 225	{ 50 55 60 }	40	21	35	16	Lift + 3	10	32	Lift + 29	25	25	25
		45	22	38	16	Lift + 3	10	32	Lift + 29	25	25	25
		50	22	40	16	Lift + 3	10	32	Lift + 29	25	25	25
175 to 225	{ 65 75 80 90 }	55	24	44	16	Lift + 3	10	32	Lift + 29	25	25	25
		65	27	50	16	Lift + 3	10	38	Lift + 29	44	44	44
		70	29	54	16	Lift + 6	10	38	Lift + 32	44	44	44
		75	30	60	16	Lift + 6	10	38	Lift + 32	44	44	44
200 to 250	100	85	33	67	16	Lift + 6	10	38	Lift + 32	50	50	50
TOLERANCE	—	± 1	± 0.5	± 1	± 1	± 1	± 1	± 1	± 2	—	—	—

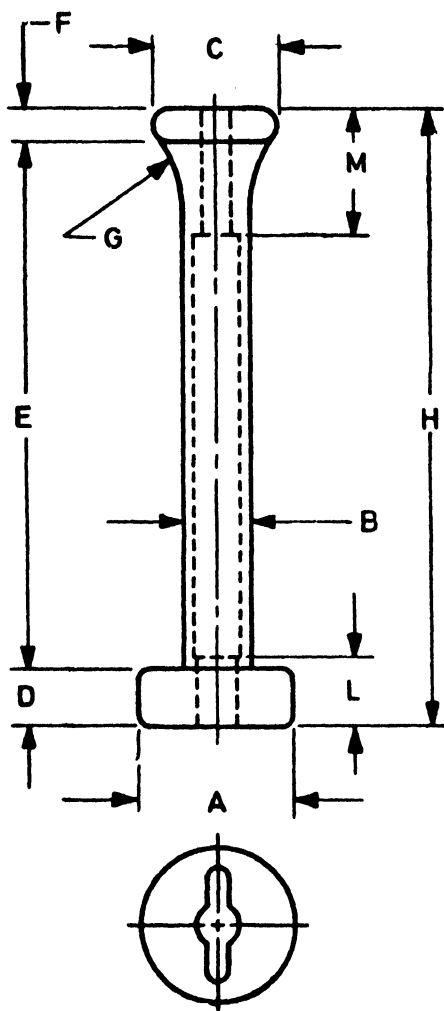


FIG. 3 A TYPICAL TAPER-BUILD  
(RADIUSED-HEAD) BOBBIN

**3.5 Resistance to Steam** — The enamelled bobbins shall be resistant to steam. The method for determining the resistance of bobbins to steam is given in A-4.

**3.6 Weight** — The weight of bobbins shall be as agreed to between the buyer and the seller subject to the following tolerance:

- a) On collective weight of 400 bobbins  $\pm 1$  percent
- b) On weight of individual bobbin  $\pm 4$  percent

#### **4. MARKING**

**4.1** Each bobbin shall be suitably marked with the brand or trade-mark of manufacturer.

#### **4.2 BIS Certification Marking**

The product may also be marked with Standard Mark.

**4.2.1** The use of the Standard Mark is governed by the provisions of Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

#### **5. PACKING**

**5.1** A suitable number of bobbins shall be packed in a wooden case strong enough to withstand the normal hazards of transit.

**5.2** Each case of bobbins shall bear the following information:

- a) Brand or trade-mark of manufacturer;
- b) Surface finish of the bobbin (for example, varnished or enamelled);
- c) Gross and net weight of case;
- d) Number of bobbins in the case; and
- e) Any other information required by the buyer.

#### **6. SAMPLING**

**6.1** The quantity of bobbins manufactured from the same species of timber and of the same type and size supplied to a buyer against a despatch note shall constitute a lot.

**6.2** The conformity of the lot to the requirements of this standard shall be determined on the basis of the tests carried out on the samples selected from it.

**6.3** Unless otherwise agreed to between the buyer and the seller, the number of bobbins to be selected from the lot shall be according to Table 4.

These shall be equally selected from at least 25 percent of the packages.

**6.4** The number of bobbins to be tested for freedom from defects, dimensions, eccentricity and weight of individual bobbin shall be according to col 2 of Table 4.

**6.5** The number of bobbins to be tested for tackiness, resistance to moisture, resistance to steam and collective weight of 400 bobbins shall be according to col 5 of Table 4.

**6.6 Criteria for Conformity** — The lot shall be considered as conforming to the requirements of this standard if the following conditions are satisfied:

- a) The number of bobbins failing to satisfy any one or more of the following requirements does not exceed the number given in col 3 of Table 4:
  - 1) Freedom from defects,
  - 2) Dimensions, and
  - 3) Weight of individual bobbin.
- b) Number of bobbins failing to meet eccentricity requirement does not exceed the number given in col 4 of Table 4.
- c) All the bobbins tested for requirements mentioned in 6.5 shall satisfy the requirements.

**TABLE 4 SAMPLE SIZE AND CRITERIA FOR CONFORMITY**

( Clauses 6.3, 6.4, 6.5 and 6.6 )

NUMBER OF BOBBINS IN THE LOT	NON-DESTRUCTIVE TESTING			DESTRUCTIVE TESTING ( NUMBER OF BOBBINS TO BE INSPECTED )
	Number of Bobbins to be Inspected	Permissible Number of Non-conforming Bobbins Except Eccentricity	Permissible Number of Non-conforming Bobbins in Case of Eccentricity	
(1)	(2)	(3)	(4)	(5)
Up to 3 000	32	3	1	5
3 001 to 10 000	50	5	2	8
10 001 and above	80	7	3	13



## **APPENDIX A**

*( Clauses 3.2, 3.3, 3.4 and 3.5 )*

### **METHODS OF TEST**

#### **A-1. ECCENTRICITY**

**A-1.1** On a suitable bobbin tester, mount a spindle ( having eccentricity not more than 0.05 mm ) on which the bobbin is intended to work. Fit the bobbin on the spindle, revolve it slowly and determine the eccentricity of bobbin at a position 20 mm below the top of the bobbin and at a position 20 mm above the bottom of the bobbin. Note the eccentricity, if any, at these two positions and find the average eccentricity.

#### **A-2. TACKINESS**

**A-2.1** Place a bobbin in one pan of a suitable balance and counterpoise it with weights in the second pan. Put an additional weight of 2.5 kg in the second pan and press down the bobbin in the first pan with the thumb till the two pans are balanced. Hold the balance in that position for 1 minute and release the pressure of thumb slowly.

**A-2.2** Report the bobbin to be in conformity in respect of tackiness, if

- a) it does not show any apparent tendency to stick to the thumb; and
- b) the thumb impression on it, if any, can be wiped off with dry cotton.

#### **A-3. RESISTANCE TO MOISTURE**

**A-3.1** Weigh a bobbin. Immerse it in water at 50°C for 1 hour. Wipe, dry and weigh it again. Calculate the gain in weight and express it in percentage.

#### **A-4. RESISTANCE TO STEAM (FOR ENAMELLED BOBBINS ONLY)**

**A-4.1** Take a bobbin and expose it to saturated steam over a pot of boiling water for half an hour or expose it to steam at 2 kgf/cm<sup>2</sup> for 10 minutes. Place the bobbin in one pan of a suitable balance, counterpoise with weights in the second pan, and add a 2.5 kg weight. Press down the bobbin in the first pan with the thumb till the two pans are balanced. Hold the balance in that position for 1 minute and release the pressure of thumb slowly.

**A-4.2** Report the bobbin to be in conformity in respect of resistance to steam, if it meets the requirements given in A-2.2.

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